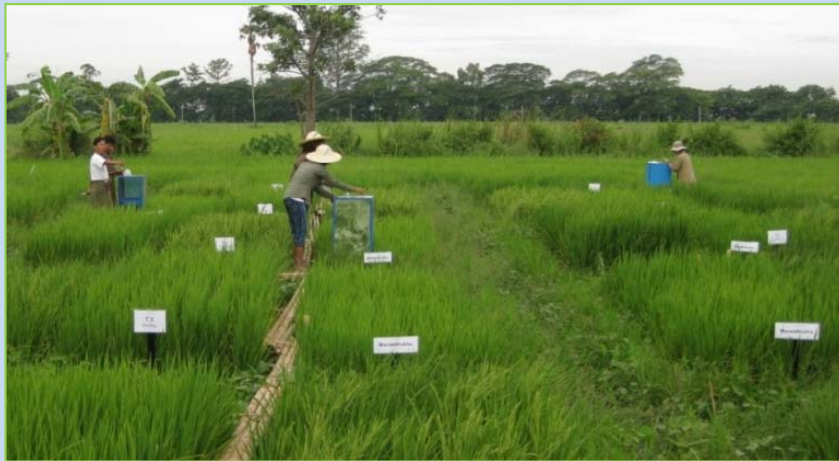


Low Carbon Asia Research Network (LoCARNet) First Annual Meeting

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National GHG Inventory of INC Project, Myanmar



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**Team Leader, National GHG Inventory and
Mitigation Option Analysis Team**

Institutional Status of INC Project

- Myanmar ratified UNFCCC in 1994 as a non-Annex I Party, Myanmar sought Global Environment Facility (GEF) funding in 2006 to fulfill its commitments and obligations for preparing and reporting its INC
- NCEA (National Communication for Environmental Affairs) of Myanmar under the Ministry of Foreign Affairs, relocated under the Ministry of Forestry in 2004 launched an INC project in 2008
- NCEA was abolished and the National Environmental Conservation Committee (NECC) was formed in April 2011
- Ministry of Forestry was renamed into the Ministry of Environmental Conservation and Forestry (MOECAAF) in September, 2011
- Environmental affairs will be taken into action more promptly and effectively by the designated Ministry
- Establishment of new Department of Environmental Conservation is under the recruiting process

INC Project of Myanmar

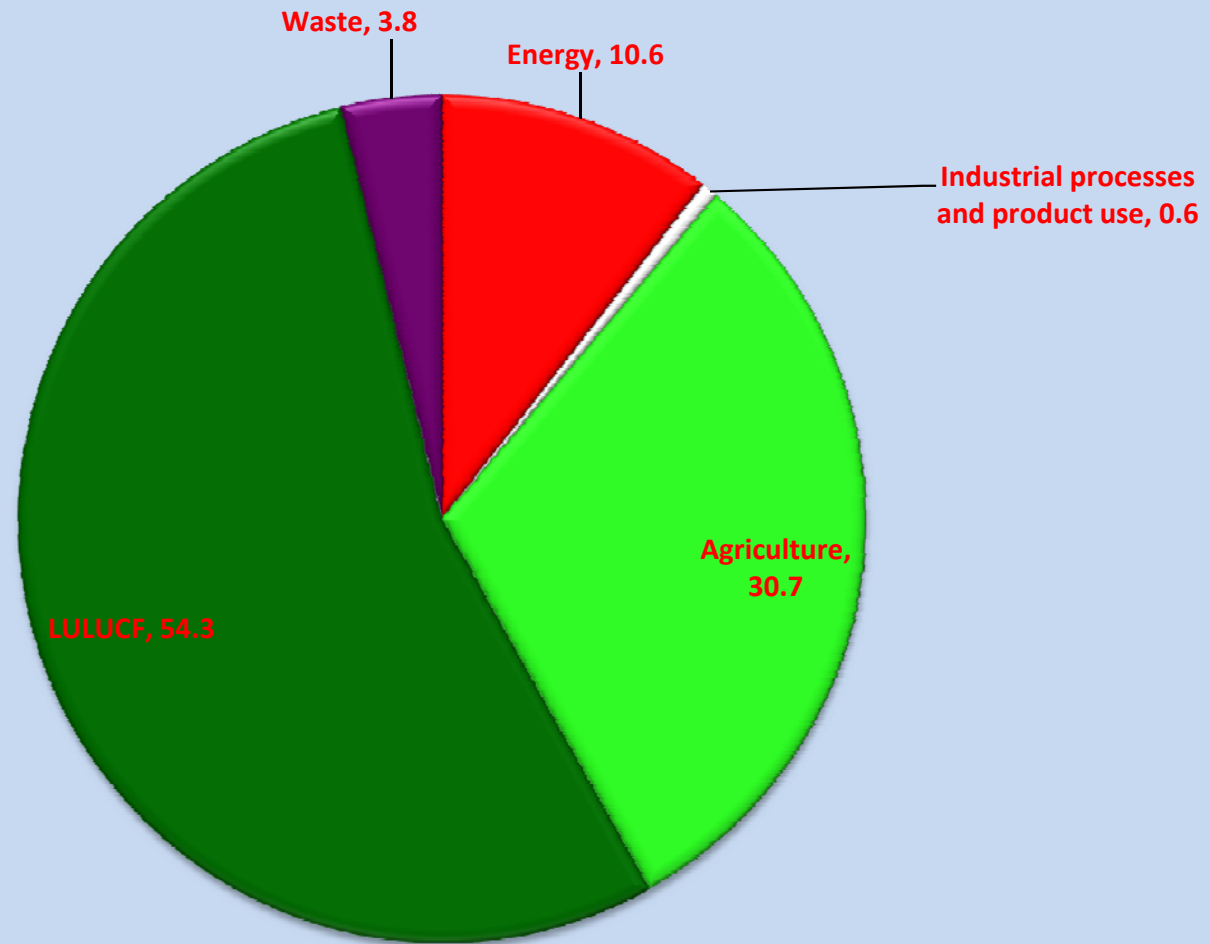
- **INC project started in 2008:**
- **The project comprised working groups --**
- **(i) GHG Inventory and Mitigation Option Analysis;**
- **(ii) Vulnerability and Adaptation Assessment;**
- **(iii) Development and Transfer of Environmentally Sound Technologies;**
- **(iv) Research and Systematic Observation;**
- **(v) Education, Training and Public Awareness, and**
- **(vi) Compilation of the National Communication.**

GHG Inventory of Myanmar for the year 2000

Source/Sink	CO ₂ removal (Gg)	CO ₂ e total emission (Gg)	CO ₂ e net emission (Gg)	Share of emission (%)
Energy sector	0	7863.47	7863.47	10.6
Industrial sector	0	463.29	463.29	0.6
Agriculture sector including livestock	0	22,843.25	22,843.25	30.7
Land use change and Forestry sector	142,221.20	40,404.73	-101,816.50	54.3
Waste sector	0	2825.97	2,825.97	3.8
Total	142,221.40	74,400.71	-67,820.50	100.0

Share of Emission by Sector in 2000

Share of emission by sector (%)



National GHG Inventory Status of Myanmar

- **INC**
- **Base year 2000, 2006 IPCC guide lines**
- **Total emission was estimated to be 74,358 Gg CO₂- e of which LULUCF was the largest portion (54 %) among all sectors**
- **However, carbon removal by this sector accounted for 142,221 GgCO₂- e from the atmosphere so that the country's net emissions turned out to be a negative value of 67,863 GgCO₂- e (- 67.8 million tons of CO₂**
- **Myanmar is a net negative emitter of greenhouse gases**

National GHG Inventory Status of Myanmar

It may be the underestimation of the actual national emissions:

1. Although CO₂ emissions from traditional biomass for fuel combustion were described in the energy sector, these substantial amounts (28,297.8 GgCO₂-e) were included neither in the energy sector nor in the National Totals according to IPCC 2006 Guidelines.
2. Annual decreases in biomass carbon stocks due to biomass losses for the year 2000 were calculated based on the official data available for the activities of loss of carbon by wood removal, harvested wood products, shifting cultivation and deforestation.
3. Large area of deforestation was encountered in Myanmar but the deforested areas by various causes, such as illegal logging and land use change patterns are not available.
4. Data on actual biomass burning during land use change (e.g., shifting cultivation, land clearing, etc.) and actual areas burnt (e.g., forest fire) annually were lacking

National GHG Inventory Status of Myanmar

- It was observed that LUCF sector was the only sink of CO₂ in Myanmar and at the same time the biggest CO₂ emitter.
- But with decreasing forest cover and increasing forest degradation, if this trend is left unchecked, the only carbon reservoir in the country will shrink gradually.
- On the other hand, GHG emissions from other economic sectors will increase as a result of mechanized agriculture, industrialization and national economic development.
- The draft report already updated in the year 2011 and submitted to the UNFCCC the MoECAF (Ministry of Environmental Conservation and Forestry) is the processing for SNC

Limitations and Constraints

- Although the IPCC 2006 Tier 1 methods and default emission factors were used in the present exercise, large uncertainties still exist in various activities; Improvement should be made for further calculation
- Poor Institutional arrangements: data collection, analyzing, verifying and updating data
- Weakness in research, assessment and verification for certain activity data , and country-specific emission factors
- Lack of financial and technical support for developing CS Efs
- Inadequate GHGI technical experts in the ministries and agencies
- Difficult to engage full time committed and dedicated team members

Limitations and Constraints

- **Challenges: Multiple land use especially in croplands**
- **The land use in private owned farm in the some States/ Regions**
- **The soil classification especially the wetlands/ peat land**
- **Mitigation options in rice production: good irrigation facilities, drainage, more than 70% is rain-fed cultivation; fertilization practices of N₂ and organic manure**
- **Mitigation Technologies in Livestock Sector: Supplementation, Improved feeding practices, manure management/ biogas, pasture management**

Future Inventory

- **For preparing SNC: Set up activities or plans for the next GHG inventory is ongoing process**
- **An institutional framework: an organization system, and capable technical expertise should be set up**
- **To develop a permanent system for National GHGI preparation; A National GHG Inventory Office needs to be established to coordinate the GHG inventory**
- **In the system, various Government agencies, policy makers and scientists, researchers should be involved**
- **It needs a project: “Capacity Building for National GHGI” to strengthen the capacity and help to improve the GHGI**

Action Plans for SNC

- ✓ **Formulate and support to establish a strong GHG Inventory institutional mechanism**
- ✓ **Formulate effective, efficient and proactive overall development policy and institutional mechanism of mitigation and adaptation to the impacts of CC on agriculture and food security**
- ✓ **Strengthen national research and extension programs in the context of CC**
- ✓ **Improve the regional information sharing networks, dissemination and analysis on CC**
- ✓ **Technical and financial assistances on above action plans**

Low Emission Climate Resilient Development in Myanmar (LECRD)

- ✓ Myanmar - endowed with natural resources
- ✓ Several decades ago - degrading environment and depleting natural resources - due to the unsustainable management practices.
- ✓ The situation is compounded by the adverse impacts of the climate change ;
- ✓ The most affected people - poor farmers whose livelihoods are highly dependent on natural resources and very vulnerable to climate variability
- ✓ The importance of low-carbon development in Asia
- ✓ Formulation and better enable implementation of policies for low-carbon development in the region

Low Emission Climate Resilient Development in Myanmar (LECRD)

- ✓ **Integration of climate change concerns into development plans and programs is of vital importance for enhancing low carbon economy of a country and reducing its vulnerability to climate change.**
- ✓ **Moreover, environmental governance, which includes issues such as legislation, policy and coordination is a key factor for sustainable development.**

Low Emission Climate Resilient Development in Myanmar (LECRD)

- ✓ According to the INC Draft Report, the largest amount of GHG emission in Myanmar comes from the Land use change sector, followed by agriculture sector.
- ✓ Therefore, limiting CO₂ emissions from these sectors is the most relevant mitigation option to be focused on, which will have the greatest impact on total GHG emissions of the country.
- ✓ Due to its high sensitivity to climate changes, Myanmar needs implementation policies and strategies for adaptation to climate change, which will simultaneously support the national sustainable development

Low Emission Climate Resilient Development in Myanmar (LECRD)

- ✓ Myanmar is at an historic stage in its development
- ✓ The new Constitution provides for the basic principles of democracy; rule of law and human rights, has set out a reform agenda focusing on good governance and ensuring fundamental rights,
- ✓ A number of reforms have already been undertaken; these developments represent a unique opportunity for Myanmar to place itself on a path of sustainable, inclusive development
- ✓ Moving forward to International Relations

Projects and Activities on Climate Change Mitigation and Adaptation

- ✓ **Myanmar National Adaptation Programs of Action (NAPA) project, 2012 draft Report**
- ✓ **Myanmar Action Plan for Disaster Risk Reduction (MAPDRR), 2009**
- ✓ **Dry Zone Greening Action Plan, 1997**
- ✓ **Clean Development Mechanism (CDM) Project**
- ✓ **REDD-plus Initiatives**
- ✓ **Early Warning System**

The National Sustainable Development Strategy (NSDS) for Myanmar

- ✓ **The Myanmar NSDS proposes the preventive measures, to address the emerging environmental issues, man-made disasters and the climate change.**
- ✓ **It will help mainstream sustainable development into national and sectoral policies and strategies. which is mainstreaming environmental concerns into sectoral development**

Low Emission Climate Resilient Development in Myanmar (LECRD)

- ✓ Myanmar is a member country of Non-Annex 1 under the UNFCCC, and it has no obligation to reduce the GHG emission at the present condition.
- ✓ However, with the expected rise in economic growth which requires huge energy in near future, Myanmar is willing to implement the mitigation projects through which it can simultaneously enjoy the development opportunities.
- ✓ On the other hand, since the climate change impacts are becoming more and more evident, Myanmar urgently needs to adapt climate change impacts on its key socioeconomic sectors and communities.
- ✓ LECRD most important issue to take into account in Myanmar



THANK YOU